

Appl. No. 10/052,068
Amdt. Dated 8/2/2005
Reply to Office action of 5/3/2005

REMARKS/ARGUMENTS

This Amendment is in response to the Final Office Action mailed May 3, 2005. In the Office Action, claims 12 and 65-75 stand rejected under 35 U.S.C. § 103.

Applicant respectfully submits that the case is now in condition for allowance or in better form for appeal.

Reconsideration in light of the remarks made herein is respectfully requested.

If Examiner Wang and Primary Examiner Brier believe that an interview would further the advancement of the case, Applicant respectfully requests they contact the under-signed patent attorney of record.

Rejection Under 35 U.S.C. § 103

Claims 12 and 65-75 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious over Y. Watanabe and Y. Suenaga, "A Trigonal Prism-Based Method for Hair Image Generation", IEEE Computer Graphics and Applications, 17(3), May 1997, p. 47-53 (hereinafter Watanabe) in view of D.B. Goldman, "Fake Fur Rendering", Proc. Of the 24th Annual Conf. On Computer Graphics and Interactive Technique, p. 127-134, Aug. 1997 (hereinafter Goldman) and Ueda et al. U.S. Patent No. 6,333,985 (hereinafter Ueda).

Applicant respectfully submits that prima facie case of obviousness has not been met. Applicant respectfully submits that the references cited by the Office Action do not in fact teach or suggest the limitations of Applicant's independent claims 12, 68, and 72.

Further, Applicant respectfully submits that the Office Action has engaged in impermissible hindsight reconstruction in which the Office Action has identified individual parts of various publications and patents, and in hindsight, has pieced them together to recreate Applicant's whole claimed invention. Applicant respectfully submits that this is in violation of

Appl. No. 10/052,068
Amtd. Dated 8/2/2005
Reply to Office action of 5/3/2005

MPEP § 2143.01 and in view of the legal standards related to obviousness set forth by the Federal Circuit.

Moreover, Applicant respectfully submits that the references cited by the Office Action actually teach away from Applicant's independent claims 12, 68 and 72. Therefore, Applicant respectfully submits that the claimed invention should be patentable.

Applicant respectfully traverses the Office Action's §103 obviousness rejections in their entirety, in light of the following remarks. As stated in MPEP §2141.03:

A prima facie obviousness rejection requires the three basic criteria be met. First, there must be some teaching, suggestion, or motivation, either in the references of themselves, or in the knowledge generally available to one skilled in the art, to modify the reference or to combine the references. Second, there must be some reasonable expectation of success. Finally, the prior art reference, or references when combined, must teach all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure. MPEP §2141.03. (Emphasis added).

MPEP §2141.03 further warns that *impermissible hindsight must be avoided*.

Furthermore, with regards to obviousness, as aptly stated by the Federal Circuit in *In re Kotzab*, 55 U.S.P.Q.2D (BNA) 1313, 1316-1317 (Fed. Cir. 2000):

Most if not all inventions arise from a combination of old elements. Thus every element of a claimed invention may often be found in the prior art. However, *identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention*. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. (Emphasis added).

Additionally, as stated in the MPEP: "[i]t is improper to combine references where the references teach away from their combination." MPEP § 2145 (Emphasis added).

Appl. No. 10/052,068
Amtd. Dated 8/2/2005
Reply to Office action of 5/3/2005

To begin with, Watanabe, the primary reference, is directed to using a trigonal prism to model a human hair.

In contrast, Applicant's independent claims are directed to a *method for generating fur*. There is no teaching or suggestion in Watanabe of a *method for generating fur* including: producing a plurality of hairs representative of a *coat of fur*...modifying at least one area of hair to provide a visual effect to the area of hair in response to an internal influence...comprising for an area: identifying a hair of a plurality of hairs of the area as a *clump-center hair*...identifying an area size...indicating *clump area parameters* including clump-density, clump-size, and clump-percent...determining hairs of a plurality of hairs that are within the area as clump area hairs *in which the area located according to the clump-center hair and area size*...orienting clump area hairs *according to clump area parameters including clump-density, clump-size, and clump-percent*...and...*dynamically varying the clump area parameters including clump-density, clump-size, and clump-percent to make the fur appear increasingly wet and to provide a variety of dry-to-wet appearances*.

As set forth in Applicant's specification on pages 16-18, clump-size defines the area of a clump....Clump-density specifies how many clumps should be generated per square area...Clump-percent defines the degree of clumping for a clump-center hair.

Firstly, to begin with, Watanabe is directed to creating long human hair, not fur.

As summarized in Watanabe itself, Watanabe teaches:

[A] new efficient method of computer graphics human hair generation...Our method has a particularly notable feature-it employs a conventional Z-buffer, the fastest known practical rendering technique...a wisp model easily controls hair shape with a few parameters...our method also proves effective for rendering eyebrows, eyelashes, beards, mustaches, clothes, and personal ornaments such as earrings and hair accessories...as we show, our proposed hair-image-generation method makes it possible to draw an enormous number of hairs within a reasonable short time. (Watanabe, page 48, second paragraph). (Emphasis added).

Applicant respectfully submits that the Office Action's assertion that Watanabe teaches identifying a clump-center hair, identifying an area size, and orienting clump area hairs

Appl. No. 10/052,068
Amdt. Dated 8/2/2005
Reply to Office action of 5/3/2005

according to clump area parameters including clump-density, clump-size, and clump-percent is misplaced. The Office Action cites pages 49-52 for these assertions.

In contrast, as stated in Watanabe, the hair model disclosed in Watanabe relates to defining: “each hair as a basic object...A straightforward way to approximate a hair-like object is with a series of cylinders...We can approximate a cylinder using a prism with many flat surfaces (patches)...However, each cylinder requires many polygonal patches and we need an enormous number of patches for the total hair set...To solve the problem we must reduce the total number of patches...To reduce the number of patches, we employ trigonal prisms.” (Watanabe, page 49, emphasis added).

Thus, the hair model of Figure 3 of Watanabe that the Office Action refers to relates to modeling a single human hair utilizing a trigonal prism model. Further, as stated in Watanabe with reference to the single hair of Figure 3: “The parameters length, direction vector, thickness, twist angle, and number of trigonal prisms define the hair model...We can generate various kinds of hair (such as straight, wavy, or curly) by controlling these parameters...Figure 3 shows an example of a short hair model that uses the conjunction of six trigonal prisms...It represents the number of trigonal prisms...Here the hair has a constant thickness.” (Watanabe, page 49, emphasis added).

Applicant realizes that Watanabe discloses a wisp model. As described in Watanabe in pages 49-50: “A wisp model appears in Figure 4...In addition to the previously described parameters, this model is defined by the direction vector randomness R and the hair density N.”

However, Applicant respectfully submits that the Office Action’s assertion that Watanabe on pages 49-52 teaches or suggests clump area parameters including clump-density, clump-size, and clump-percent is misplaced.

The Office Action asserts that Watanabe teaches wisp parameters that are dynamically varied in response to head motion to provide an animated effect in the computer animation of hair and cites page 52 of Watanabe for this teaching.

Appl. No. 10/052,068
Amdt. Dated 8/2/2005
Reply to Office action of 5/3/2005

In contrast, Applicant respectfully submits that the computer animation of hair on page 52 referred to in the Office Action is in relation to a single human hair. As Watanabe states: "When hair flows in the wind, each hair moves independently...The effect of each hair's motion interacts to shape the overall hair image...As a simple method of estimating the hair motion, we use the parabolic trajectory to approximate the locus of a wisp...The locus of the wisp is defined by the locus of a parabolic trajectory at a specified time. To generate the motion of hairs, we only need to control a small number of parameters determining list loci."

Applicant respectfully submits that the controlling of a locus of each wisp is a controlling of each individual hair and there is no teaching in Watanabe on page 52, or at any other location in Watanabe, of: determining hairs of a plurality of hairs that are within the area as clump area hairs *in which the area is located according to the clump-center hair and area size...* orienting clump area hairs *according to clump area parameters including clump-density, clump-size, and clump-percent...* and...*dynamically varying the clump area parameters including clump-density, clump-size, and clump-percent to make the fur appear increasingly wet and to provide a variety of dry-to-wet appearances.*

Further, the Office Action asserts that Watanabe on pages 50-51 teaches wisp parameters. Particularly, page 51 of Watanabe states that: "Figure 7a shows 12 parameters: angle...bend...ratio control...thickness...length controls...fold controls...density controls...randomness controls...to reproduce wave loci for the wisp model...The loci of wisps are shown in real time using streamlines on the human head model..." (Emphasis added).

Applicant respectfully submits that this method set forth in Watanabe relates to generating human hair for a human head model based upon altering parameters of the loci of each individual wisp representing an individual human hair and is completely different than Applicant's claim limitations, as detailed above.

Thus, Applicant respectfully submits that Watanabe does not teach, suggest, or render obvious Applicant's claim limitations related to: determining hairs of a plurality of hairs that are within the area as clump area hairs *in which the area is located according to the clump-center hair and area size...* orienting clump area hairs *according to clump area parameters including*

Appl. No. 10/052,068
Amdt. Dated 8/2/2005
Reply to Office action of 5/3/2005

clump-density, clump-size, and clump-percent...and...dynamically varying the clump area parameters including clump-density, clump-size, and clump-percent to make the fur appear increasingly wet and to provide a variety of dry-to-wet appearances.

Quite simply, Watanabe is directed towards a totally different method of rendering human hair on a human head model utilizing a wisp model based upon altering the parameters associated with the loci of individual wisps of individual human hairs and does not relate to the generation of fur. Further, Watanabe does not teach or suggest the use of a clump-center hair or clump parameters including clump-density, clump-size, and clump-percent.

In fact, the Board of Patent Appeals and Interferences in Applicant's parent case (Serial No. 09/370,104) held as a finding of fact that Watanabe fails to teach or suggest parameters such as clump-percent, clump-rate, break-rate, break-percent, or break vector. The Board held: "Notwithstanding the Examiner's position, we have reviewed the Watanabe reference and failed to find anything in the reference that teaches or suggest these parameters." Applicant will provide a copy of the Board's Decision upon request by the Examiner.

Further, as the Office Action acknowledges, Watanabe fails to disclose "producing a plurality of hairs representative of a coat of fur." This is because Watanabe is directed towards the generation of hair in humans not to the generation of fur.

To overcome this, the Office Action cites "Fake Fur Rendering" by Goldman. This reference is cited merely because it teaches the generation of fur. However, Goldman is related to "A probabilistic lighting model...for thin coats of fur over skin..." Particularly, Goldman is related to opacity functions in relation to fur.

The only reason Goldman is cited is because it relates to fur. However, the combination of Watanabe with Goldman still does not teach or suggest Applicant's claim limitations related to: determining hairs of a plurality of hairs that are within the area as clump area hairs *in which the area located according to the clump-center hair and area size...orienting clump area hairs according to clump area parameters including clump-density, clump-size, and clump-percent...and...dynamically varying the clump area parameters including clump-density, clump-*

Appl. No. 10/052,068
Amdt. Dated 8/2/2005
Reply to Office action of 5/3/2005

size, and clump-percent to make the fur appear increasingly wet and to provide a variety of dry-to-wet appearances.

Watanabe is directed towards human hair and Goldman is directed towards opacity functions in relation to fur.

In fact, the Office Action admits that the combination of Watanabe and Goldman fails to disclose the claim limitations of “making the fur appear increasingly wet and to provide a variety of dry-to-wet appearances with the claim limitations of dynamically varying the clump area parameters including clump-density, clump-size, and clump-percent to make the fur appear increasingly wet and to provide a variety of dry-to-wet appearances.” (Final Office Action, page 5).

Then, using Applicant’s claims themselves as a template, the Office Action attempts to combine Ueda with Watanabe and Goldman to try to approximate Applicant’s claim limitations. Particularly, the Office Action utilizes Ueda for allegedly teaching making hairs appear increasingly wet by changing a dry hairstyle to a wet hair style and to provide a variety of dry-to-wet appearance when other combination of hairstyles are adjusted. The Office cites Figures 38 and 39 and column 8, lines 10-26 of Ueda for this alleged teaching.

Ueda is directed towards human hair not fur. Accordingly, Ueda teaches away from a combination with Watanabe and Goldman to teach Applicant’s claim directed towards providing a variety of dry-to-wet fur appearances.

As stated in the Abstract of Ueda: “The present invention provides a method for selecting a suitable hair-style in conformity with individual personalities and face contours...”

As set forth in the summary of invention section, column 1, lines 33-39: “This invention has an object to provide a method for selecting a suitable hair-style after checking whether a selected hair-style is suitable or not and at the same time to provide an image map for a hair-style for various hair-styles are assorted and arranged on the axis of coordinates according to general images.” (Emphasis added). Only hair-style selections for humans is disclosed. Ueda is not at

Appl. No. 10/052,068
Amtd. Dated 8/2/2005
Reply to Office action of 5/3/2005

all directed to a *method for generating fur* as set forth in all of Applicant's independent claims 12, 68, and 72.

In Figure 38, an image map shows a chart on which the words "wet" and "dry" are shown. In the citation of Ueda set forth by the Office Action (col. 8, lines 9-26) only the words "wet" and "dry" are mentioned. There is absolutely no teaching or suggestion in Ueda of *dynamically varying clump area parameters including clump-density, clump-size, and clump-percent to make fur appear increasingly wet and to provide a variety of dry-to-wet fur appearances utilizing clump-center hairs and clump areas.*

Applicant respectfully submits that Watanabe and Ueda directed towards human hair modeling cannot be utilized in conjunction with the fake fur rendering and opacity functions of Goldman because there is no motivation to combine these references except impermissible hindsight reconstruction to reconstruct Applicant's claims.

Further, *even if this hindsight reconstruction was permissible*, this combination of Watanabe, Goldman, and Ueda would still not teach or suggest Applicant's claim limitations directed towards dynamically varying clump area parameters including clump-density, clump-size, and clump-percent to make fur appear increasingly wet and to provide a variety of dry-to-wet fur appearances utilizing clump-center hairs and clump areas.

In fact, the Board of Patent Appeals and Interferences has already made a finding of fact that Watanabe does not disclose clump area parameters such as clump-density, clump-size, and clump-percent.

Applicant respectfully submits that Watanabe, Goldman, and Ueda are not properly combinable, and even if they were, their combination still would not teach or suggest the limitations of Applicant's independent claims 12, 68, and 72.

Accordingly, Applicant respectfully submits that independent claims 12, 68, and 72 are allowable, as well as the dependent claims therefrom, and Applicant respectfully requests that the Examiner pass them to issuance.

Appl. No. 10/052,068
 Amdt. Dated 8/2/2005
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Conclusion

In view of the remarks made above, it is respectfully submitted that pending claims 12 and 65-75 define the subject invention over the prior art of record. Thus, Applicant respectfully submits that all the pending claims are in condition for allowance, and such action is earnestly solicited at the earliest possible date. The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application. To the extent necessary, a petition for an extension of time under 37 C.F.R. is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such account.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 8/2/2005

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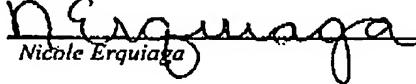
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